

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
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OCT 30 1991

NOTICE OF PUBLIC HEARING

UNIVERSITY OF CALIFORNIA

NOTICE OF FILING

PROPOSED AMENDMENTS TO THE WATER QUALITY CONTROL PLAN, SAN FRANCISCO BAY REGION

NOTICE IS HEREBY GIVEN, that the California Regional Water Quality Control Board, San Francisco Bay Region (Regional Board), will hold a public hearing to receive testimony on revisions to the proposed Basin Plan amendments and to consider adoption of amendments as specified below to the Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan).

The public hearing will be held on Wednesday, November 20, 1991 starting at 9:30 a.m. at the BART Board Room at 800 Madison Street, Oakland, California. Written comments will be accepted until November 25, 1991. At its regular meeting on December 11, 1991 the Regional Board will consider whether to adopt the proposed Basin Plan amendments. Please note that the December meeting is the second Wednesday of the month.

Proposed amendments to the beneficial use section in the Basin Plan regarding shellfish harvesting and commercial/sport fishing for human consumption are being circulated for the first time. This proposed amendment would reflect that this potential beneficial use does not exist in selected water bodies near municipal discharges and thus removes it as a potential beneficial use. A Use Attainability Analysis has been prepared according to U.S. Environmental Protection Agency guidance justifying the removal of the potential beneficial use and is available upon request.

A site-specific water quality objective for mercury for the protection of human health is also proposed for the South Bay (the area south of the Dumbarton Bridge). The proposed water quality objective for mercury for this area is 0.19 ug/L versus 0.025 ug/L for the remainder of the Bay. This site-specific objective is based on information

collected by the three South Bay dischargers. A staff report evaluating the dischargers' information and proposed water quality objective is available upon request.

Based on comments received at the July 22, 1991, September 12, 1991 and September 26, 1991 workshops, written comments received by the August 15, 1991 and October 21, 1991 deadlines, and the public hearing held on October 16, 1991, revisions to the proposed Basin Plan amendments have been made. Significant changes or additions have been made in the areas listed below. Copies of the proposed language to be inserted into the Basin Plan are attached. The attached amendments are as follows:

- Water Quality Objectives - Chemicals
- Effluent Limitations - Chemicals
- Water Quality Objectives - Toxicity
- Effluent Limitations - Acute and Chronic Toxicity
- Urban Runoff Management
- Waste Minimization

Previously circulated amendments have had only minor changes at this time. These are:

- Mines and Mineral Producers
- Shallow Drainage Wells
- Water Reclamation
- Dairy Waste Management
- Prohibition Exception Provision for Disposal of Extracted Groundwater from Groundwater Cleanup Projects


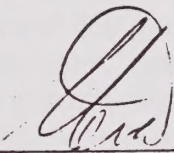
Copies of these amendments are not included in the attached package but are available upon request from the Regional Board.

Action on these amendments will be taken in accordance with a regulatory program exempt under Section 21080.5 of the Public Resources Code. The Basin Planning process has been certified as "functionally equivalent" to the preparation of an Environmental Impact Report (EIR) or Negative Declaration for the purposes of complying with the California Environmental Quality Act (Title 14, California Code of Regulations, Section 15251). This Notice serves as the Notice of Filing for compliance with Section 21080.5 of the Public Resources Code. The project description and environmental checklist are available at the Regional Board office.

Interested individuals and organizations are invited to the public hearing. Written comments will be accepted until November 25, 1991 on the proposed revisions. Oral testimony will not be accepted on issues other than the topics identified in this notice. Oral commentators are encouraged to submit written copies of their comments in order to ensure the accuracy of the record. Responses to all written comments received will be available prior to the November 20, 1991 Regional Board meeting.

Copies of the proposed amendments and related materials are available at the Regional Board offices during normal business hours. Written inquiries should be directed to the Planning Division, California Regional Water Quality Control Board at the above address. Telephone inquiries should be directed to Michael Carlin at 510/464-1325 or Thomas Mumley at 510/464-0962.

DATED: 10.25.91



Steven R. Ritchie
Executive Officer

Chapter II. Beneficial Uses: Proposed Changes

Add a footnote to Table II-1 as follows:

"The potential beneficial uses of shellfish harvesting and commercial/sport fishing for human consumption have been removed in the fresh water zones (salinity less than 5 parts per thousand) near the municipal discharges in the following water bodies: Artesian Slough, Coyote Creek, Moffett Channel, Guadalupe Slough, South Bay, Miller Creek, Novato Creek, Boynton Slough, Suisun Slough, and Peyton Slough. In these waters the substrate is poorly suited to shellfish propagation, and the effluent-dominated waters cannot feasibly attain a mercury concentration of 0.012 $\mu\text{g/L}$, the fresh water objective for the protection of human health based on the consumption of fish and shellfish. This determination will be reviewed periodically in light of effluent mercury concentrations, feasibility of additional source control measures, and the presence or abundance of fish and shellfish in these fresh water zones."

The following information was obtained from the records of the Department of the Interior, Bureau of Land Management, regarding the land owned by the United States in the State of California.

The land is located in the County of [County Name], State of California, and is situated in the [Section] of the [Township] and [Range] of the [Meridian].

The land is described as follows: [Description of the land, including its size, location, and any other relevant information.]

The land is owned by the United States, and is subject to the following conditions: [List of conditions, including any restrictions on use, transfer, or disposal.]

The land is being offered for sale, and the following information is being provided for your information: [Additional information, including the date of the sale, the location of the land, and any other relevant details.]

I. Chapter III. Water Quality Objectives: Proposed Changes

- A. Delete the last two paragraphs on page III-1, as the issue of dilution and mixing zones will be addressed in Chapter IV, and the language here is not consistent with Chapter IV.
- B. Supplement Tables III-2A and III-2B with the objectives adopted in the statewide plans (attached).
- C. Change the heading of Table III-2A to read "WATER QUALITY OBJECTIVES FOR TOXIC POLLUTANTS FOR SURFACE WATERS WITH SALINITIES GREATER THAN OR EQUAL TO 5 PARTS PER THOUSAND". Change the heading of Table III-2B to read "WATER QUALITY OBJECTIVES FOR TOXIC POLLUTANTS FOR SURFACE WATERS WITH SALINITIES LESS THAN 5 PARTS PER THOUSAND".
- D. Modify the last sentence of the first paragraph on page III-5 to read "The Regional Board intends to work towards the derivation of site-specific objectives for segments of the Bay-Delta estuarine system. Copper, nickel, and selenium, and mercury will be the highest priorities in this effort. Site specific objectives to be considered by the Regional Board shall be developed in accordance with the provisions in Chapter II, Section D or Appendix 3 of the California Enclosed Bays and Estuaries Plan (State Water Resources Control Board Resolution 91-33) and specific Regional Board guidance. The site specific objectives for selenium and mercury will take into account impacts to beneficial uses caused by bioaccumulation. Pending the adoption of site-specific objectives, the objectives in Tables III-2A and III-2B apply throughout the Region. Site specific water quality objectives are listed in Table III-2C."
- E. Add the following table:

TABLE III-2C
SITE SPECIFIC WATER QUALITY OBJECTIVES FOR TOXIC POLLUTANTS
(all values in ug/L)

PARAMETER	WATER BODY	FRESH OR MARINE	OBJECTIVE
Mercury	South Bay south of Dumbarton	Marine	0.19 (30 day average) "

- F. Delete the second paragraph on page III-5, concerning South San Francisco Bay.

Table 1. Water Quality Objectives for Protection of Saltwater Aquatic Life.

Constituent	Unit	4-Day Average	Daily Average	1-Hour Average
arsenic	ug/l	36	--	69
cadmium	ug/l	9.3	--	43
chlordane ^a	ng/l	--	4.0	--
chromium (VI) ^a	ug/l	50	--	1100
copper	ug/l	--	--	2.9
DDT ^a	ng/l	--	1.0	--
dieldrin	ng/l	--	1.9	--
endosulfan ^a	ng/l	--	8.7	34
endrin ^a	ng/l	--	2.3	37
heptachlor	ng/l	--	3.6	--
hexachlorocyclohexane-				
gamma	ng/l	--	160	--
lead	ug/l	5.6	--	140
mercury	ug/l	--	--	2.1
nickel	ug/l	8.3	--	75
PCBs ^a	ng/l	--	30	--
pentachlorophenol	ug/l	7.9	--	13
selenium ^c	ug/l	71	--	300
silver	ug/l	--	--	2.3 ^b
toxaphene	ng/l	0.02	--	210
zinc	ug/l	86	--	95

* - See Appendix 1 for definition of terms

a - Dischargers may at their option, meet this limitation as total chromium.

b - Instantaneous Maximum

c - Especially in estuarine waters, Regional Boards should assess whether more stringent objectives or control measures are warranted in order to protect fish and wildlife and their consumption.

ng/l = milligram(s) per liter; ug/l = microgram(s) per liter; ng/l = nanogram(s) per liter;
pg/l = picogram(s) per liter; "--" = not applicable

Table 2. Water Quality Objectives for Enclosed* Bays and Estuaries* for Protection of Human Health.

Constituent	Unit	30-day Average
<u>Noncarcinogens**</u>		
1,2-dichlorobenzene	mg/l	18
1,3-dichlorobenzene	ug/l	2600
endosulfan*	ug/l	2.0
endrin*	ug/l	0.8
fluoranthene	ug/l	42
mercury	ng/l	25
nickel	mg/l	4.6
toluene	mg/l	300
tributyltin	ng/l	5.0
<u>Carcinogens**</u>		
aldrin	pg/l	140
benzene	ug/l	21
chlordane*	pg/l	81
chloroform	ug/l	480
DDT*	pg/l	600
1,4-dichlorobenzene	ug/l	64
dichloromethane	ug/l	1600
dieldrin	pg/l	140
halomethanes*	ug/l	480
heptachlor	ng/l	0.17
heptachlor epoxide	ng/l	0.07
hexachlorobenzene	pg/l	690
hexachlorocyclohexane		
alpha	ng/l	13
beta	ng/l	46
gamma	ng/l	62
PAHs*	ng/l	31
PCBs*	pg/l	70
pentachlorophenol	ug/l	8.2
TCDD* equivalents	pg/l	0.014
toxaphene	pg/l	690
2,4,6-trichlorophenol	ug/l	1.0

* - See Appendix 1 for definition of terms

** - Note: Certain dischargers may be subject to more stringent requirements pursuant to Chapter 6.6 of Division 20 of the California Health and Safety Code.

mg/l - milligram(s) per liter; ug/l - microgram(s) per liter; ng/l - nanogram(s) per liter;
pg/l - picogram(s) per liter

Table 1. Water Quality Objectives for Protection of Freshwater Aquatic

Constituent	Unit	4-Day Average	Daily Average	1-Hour Average	Instantaneous Maximum
arsenic	ug/l	190	--	360	--
cadmium	ug/l	b	--	b	--
chlordan*	ng/l	--	4.3	--	--
chromium (VI)	ug/l	11	--	16	--
copper	ug/l	c	--	c	--
DDT*	ng/l	--	1.0	--	--
dieldrin	ng/l	--	1.9	--	--
endosulfan*	ng/l	--	56	--	220
endrin*	ng/l	--	2.3	--	180
heptachlor	ng/l	--	3.8	--	--
hexachlorocyclohexane- gamma	ng/l	--	80	--	--
lead	ug/l	d	--	d	--
mercury	ug/l	--	--	2.4	--
nickel	ug/l	e	--	e	--
PCBs*	ng/l	--	14	--	--
pentachlorophenol	ug/l	h	--	h	--
selenium	ug/l	5.0	--	20	--
silver	ug/l	--	--	--	f
toxaphene	ng/l	0.2	--	730	--
tributyltin	ng/l	20 ⁱ	40	--	60
zinc	ug/l	g	--	g	--

* - See Appendix 1 for definition of terms

mg/l = milligram(s) per liter; ug/l = microgram(s) per liter; ng/l = nanogram(s) per liter; "--" = Not applicable

b-g = Objectives for these metals are expressed by the following formulas, where H = ln (hardness) in mg/l as CaCO₃:

b = 4-DAY AVERAGE cadmium = $e^{0.7852H} - 3.490$; 1-HOUR AVERAGE cadmium = $e^{1.128H} - 3.828$. For example where hardness is 50 mg/l, the 4-DAY AVERAGE cadmium = 0.66 ug/l and the 1-HOUR AVERAGE cadmium = 1.8 ug/l.

c = 4-DAY AVERAGE copper = $e^{0.8545H} - 1.465$; 1-HOUR AVERAGE copper = $e^{0.9422H} - 1.464$. For example where hardness is 50 mg/l, the 4-DAY AVERAGE copper = 6.5 ug/l and the 1-HOUR AVERAGE copper = 9.2 ug/l.

d = 4-DAY AVERAGE lead = $e^{1.273H} - 4.705$; 1-HOUR AVERAGE lead = $e^{1.273H} - 1.460$. For example where hardness is 50 mg/l, the 4-DAY AVERAGE lead = 1.3 ug/l and the 1-HOUR AVERAGE lead = 34 ug/l.

e = 4-DAY AVERAGE nickel = $e^{0.846H} + 1.1645$; 1-HOUR AVERAGE nickel = $e^{0.846H} + 3.3612$. For example where hardness is 50 mg/l, the 4-DAY AVERAGE nickel = 88 ug/l and the 1-HOUR AVERAGE nickel = 790 ug/l.

f = INSTANTANEOUS MAXIMUM silver = $e^{1.72H} - 6.52$. For example where hardness is 50 mg/l, the INSTANTANEOUS MAXIMUM silver = 1.2 ug/l.

g = 4-DAY AVERAGE zinc = $e^{0.8473H} + 0.7614$; 1-HOUR AVERAGE zinc = $e^{0.8473H} + 0.8604$. For example where hardness is 50 mg/l, the 4-DAY AVERAGE zinc = 59 ug/l and the 1-HOUR AVERAGE zinc = 65 ug/l.

h = The 4-DAY AVERAGE objective for pentachlorophenol is $e^{1.005(pH)} - 5.290$. This is 13 ug/l at pH = 7.8. The 1-HOUR AVERAGE objective for pentachlorophenol is $e^{1.005(pH)} - 4.830$. This is 20 ug/l at pH = 7.8.

i = Six-Month Median.

Table 2. Water Quality Objective: Inland* Surface Waters for Protection of Human Health.

Constituent	<u>Existing or Potential</u> <u>Sources of Drinking Water</u>		<u>Other Waters</u>	
	<u>Unit</u>	<u>30-day Average</u>	<u>Unit</u>	<u>30-Day Average</u>
<u>Noncarcinogens**</u>				
cadmium	ug/l	10	--	--
4-chloro-3-methylphenol	ug/l	3000***	--	--
chromium (VI)	mg/l	0.05	--	--
copper	ug/l	1000.0***	--	--
1,2-dichlorobenzene*	ug/l	2700	mg/l	18
1,3-dichlorobenzene	ug/l	400	ug/l	2600
2,4-dichlorophenol	ug/l	0.30***	--	--
endosulfan*	ug/l	0.9	ug/l	2.0
endrin*	ug/l	0.8	ug/l	0.8
fluoranthene	ug/l	42	ug/l	42
lead	ug/l	50.0	--	--
mercury	ng/l	12	ng/l	12
nickel	mg/l	0.6	mg/l	4.6
phenol	ug/l	300***	--	--
selenium	ug/l	10	--	--
silver	mg/l	0.05	--	--
toluene	ug/l	10000	mg/l	300
zinc	mg/l	5.0***	--	--
<u>Carcinogens**</u>				
aldrin	pg/l	130	pg/l	140
arsenic	ug/l	5.0	--	--
benzene	ug/l	0.34	ug/l	21
chlordane*	ng/l	0.08	pg/l	81
chloroform	ug/l	100	ug/l	480
DDT*	ng/l	0.59	pg/l	600
1,4-dichlorobenzene	ug/l	9.9	ug/l	64
dichloromethane	ug/l	4.6	ug/l	1600
dieldrin	pg/l	140	pg/l	140
halomethanes*	ug/l	100	ug/l	480
heptachlor	ng/l	0.16	ng/l	0.17
heptachlor epoxide	ng/l	0.07	ng/l	0.07
hexachlorobenzene	ng/l	0.66	pg/l	690
hexachlorocyclohexane				
alpha	ng/l	3.9	ng/l	13
beta	ng/l	14	ng/l	46
gamma	ng/l	19	ng/l	62
PAHs*	ng/l	2.8	ng/l	31
PCBs*	pg/l	70	pg/l	70
pentachlorophenol	ug/l	0.28	ug/l	8.2
TCDD* equivalents	pg/l	0.013	pg/l	0.014
toxaphene	ng/l	0.67	pg/l	690
2,4,6-trichlorophenol	ug/l	0.34	ug/l	1.0

* - See Appendix 1 for definition of terms *** - taste and/or odor-based objectives

** - Note: Certain dischargers may be subject to more stringent requirements pursuant to Chapter 6.6 of Division 20 of the California Health and Safety Code.

mg/l = milligram(s) per liter; ug/l = microgram(s) per liter;

ng/l = nanogram(s) per liter; pg/l = picogram(s) per liter; "--" = Not applicable

Implementation Plan - Proposed language

The following language is proposed to replace the Section entitled Effluent Limitations on pages IV-2 and IV-3. In addition, the two paragraphs on pages IV-3 and IV-4 entitled San Francisco Bay South of the Dumbarton Bridge will be deleted.

EFFLUENT LIMITATIONS

The effluent limitations described below have been established to help achieve the water quality objectives identified in Chapter III. Effluent limitations for toxic substances are listed in Table IV-1A for discharges to shallow water and in Table IV-1B for deep water discharges. In order to be classified as a deep water discharge waste must be discharged through an outfall with a diffuser, and must receive a minimum initial dilution of 10:1 with generally much greater dilution. All other discharges are classified as shallow water discharges.

Fresh water effluent limitations shall apply only to discharges to waters both outside the zone of tidal influence and with salinities consistently lower than 5 parts per thousand. Estuarine effluent limitations shall apply to all other discharges except for discharges to the Pacific Ocean, which are covered by the California Ocean Plan. Estuarine effluent limitations are based on the most stringent of fresh (non-drinking water) and salt water objectives for each substance. This approach has been taken for the following reasons: historically, salinity varies greatly in the estuary; there are not enough salinity data to precisely delineate salinity zones; and it provides protection for both fresh and salt water species at any salinity.

The effluent limitations in both Tables are calculated from the objectives in either Table III-2A or Table III-2B based on the following equation:

$$C_e = C_o + D(C_o - C_b)$$

where C_e = effluent limitation for the substance;

C_o = the water quality objective for the substance;

D = the assigned dilution ratio for the discharge, as described below;

C_b = the ambient background concentration as shown in Table X and described below.

Effluent limitations calculated from objectives based on the protection of aquatic life are to be implemented listed as daily averages. ~~It is not practical to maintain the distinction between 4-day averages, 24-hour averages, one hour averages and instantaneous maxima~~

TABLE IV-1A: SHALLOW WATER EFFLUENT LIMITATIONS (UG/L)

CHEMICAL NAME	FRESH WATER		ESTUARINE WATER	
	HUMAN HEALTH	AQUATIC LIFE	HUMAN HEALTH	AQUATIC LIFE
	30-day Average	Daily Average	30-day Average	Daily Average
			18000	
1,2 DICHLOROBENZENE (a)	2700		2600	
1,3 DICHLOROBENZENE	400		64	
1,4 DICHLOROBENZENE	9.9			
2,4 DICHLOROPHENOL	0.3		1	
2,4,6 TRICHLOROPHENOL	0.34			
4-CHLORO-3-METHYLPHENOL	3000		0.0001	
ALDRIN	0.0001			36
ARSENIC	5	190	0.01	
A-BHC	0.004		21	
BENZENE	0.34		0.05	
B-BHC	0.01			1.1
CADMIUM	10	1.1	0.0001	0.004
CHLORDANE (a)	0.0001	0.004	480	
CHLOROFORM	100			11
CHROMIUM VI (b)	50	11		2.9
COPPER	1000	11.8		1
CYANIDE (c)		5.2	0.0006	0.001
DDT (a)	0.0006	0.001	1600	
DICHLOROMETHANE	4.6		0.0001	0.002
DIELDRIN	0.0001	0.002	2	0.009
ENDOSULFAN (a)	0.9	0.06	0.8	0.002
ENDRIN (a)	0.8	0.002	42	
FLUORANTHENE	42		0.06	0.08
G-BHC (LINDANE)	0.02	0.08	480	
HALOMETHANES (a)	100		0.0002	0.004
HEPTACHLOR	0.0002	0.004	0.0001	
HEPTACHLOR EPOXIDE	0.0001		0.0007	
HEXACHLOROBENZENE	0.0007			

TABLE IV-1A: SHALLOW WATER EFFLUENT LIMITATIONS (UG/L)

CHEMICAL NAME	FRESH WATER		ESTUARINE WATER	
	HUMAN HEALTH	AQUATIC LIFE	HUMAN HEALTH	AQUATIC LIFE
	30-day Average	Daily Average	30-day Average	Daily Average
LEAD	50	3.2		3.2
MERCURY	0.01	2.4	0.01	2.1
NICKEL	600	160	4600	8.3
PAHS (a)	0.003		0.03	15
PCBS (TOTAL) (a)	0.0001	0.01	0.0001	0.01
PENTACHLOROPHENOL	0.28	9.5	8.2	7.9
PHENOL	300			30
SELENIUM	10	5		5
SILVER	50	4		2.3
TCDD EQUIVALENTS (a)	1E-08		1E-08	
TOLUENE	10000		300000	
TOXAPHENE	0.0007	0.0002	0.0007	0.0002
TRIBUTYLTIN		0.02	0.005	0.01
ZINC	5000	110		86

(a) See SWRCB definition of terms

(b) Dischargers may, at their option, meet this limitation as total chromium.

(c) Dischargers may, at their option, demonstrate compliance with this limitation by measurement of weak acid dissociable cyanide

Cd, Cu, Pb, Ni, Ag & Zn limits calculated at hardness = 100 mg/l as CaCO₃

Pentachlorophenol limit calculated at pH = 7.5

Concentrations of order 0.01 ug/l (10 ppt) have been rounded to one significant figure.

TABLE IV-1B: DEEP WATER EFFLUENT LIMITATIONS (UG/L)

CHEMICAL NAME	FRESH WATER		ESTUARINE WATER	
	HUMAN HEALTH 30-day Average	AQUATIC LIFE Daily Average	HUMAN HEALTH 30-day Average	AQUATIC LIFE Daily Average
1,2 DICHLOROBENZENE (a)	27000		180000	
1,3 DICHLOROBENZENE	4000		26000	
1,4 DICHLOROBENZENE	99		640	
2,4 DICHLOROPHENOL	3			
2,4,6 TRICHLOROPHENOL	3.4		10	
4-CHLORO-3-METHYLPHENOL	30000			
ALDRIN	0.001		0.001	
ARSENIC	50	1900		360
A-BHC	0.04		0.13	
BENZENE	3.4		210	
B-BHC	0.14		0.46	
CADMIUM	100	10.7		20
CHLORDANE (a)	0.0008	0.04	0.0008	0.04
CHLOROFORM	1000		4800	
CHROMIUM VI (b)	500	110		110
COPPER	10000	78		17
CYANIDE (c)		52		10
DDT (a)	0.006	0.01	0.006	0.01
DICHLOROMETHANE	46		16000	
DIELDRIN	0.001	0.02	0.001	0.02
ENDOSULFAN (a)	9	0.56	20	0.09
ENDRIN (a)	8	0.02	8	0.02
FLUORANTHENE	420		420	
G-BHC (LINDANE)	0.19	0.8	0.62	0.8
HALOMETHANES (a)	1000		4800	
HEPTACHLOR	0.002	0.04	0.002	0.04
HEPTACHLOR EPOXIDE	0.0007		0.0007	
HEXACHLOROBENZENE	0.007		0.007	

TABLE IV-1B: DEEP WATER EFFLUENT LIMITATIONS (UG/L)

CHEMICAL NAME	FRESH WATER		ESTUARINE WATER	
	HUMAN HEALTH	AQUATIC LIFE	HUMAN HEALTH	AQUATIC LIFE
	30-day Average	Daily Average	30-day Average	Daily Average
				53
LEAD	490	23	0.08	21
MERCURY	0.08	24	46000	65
NICKEL	6000	1570	0.31	150
PAHS (a)	0.03		0.0007	0.14
PCBS (TOTAL) (a)	0.0007	0.14	82	79
PENTACHLOROPHENOL	2.8	95		300
PHENOL	3000			50
SELENIUM	100	50		23
SILVER	500	40	1E-07	
TCDD EQUIVALENTS (a)	1E-07		3000000	
TOLUENE	100000		0.007	0.002
TOXAPHENE	0.007	0.002	0.05	0.12
TRIBUTYLTIN		0.2		840
ZINC	50000	1055		
(a) See SWRCB definition of terms				
(b) Dischargers may, at their option, meet this limitation as total chromium				
(c) Dischargers may, at their option, demonstrate compliance with this limitation				
by measurement of weak acid dissociable cyanide				
Cd,Cu,Pb,Ni,Ag & Zn limits calculated at hardness = 100 mg/l as CaCO3				
Cd,Cu,Pb,Hg,Ni,Ag & Zn limits account for background concentrations				
Pentachlorophenol limit calculated at pH = 7.5				
Concentrations of order 0.01 ug/l (10 ppt) have been rounded to one significant figure.				

~~in effluent limitations given anticipated monitoring frequencies.~~ However, effluent limitations may for arsenic, cadmium, chromium, copper (fresh water limitation only), lead, nickel, pentachlorophenol, selenium, toxaphene and zinc may be included in permits as 4-day averages. In this case, permits shall require that compliance with the effluent limitation be demonstrated by reporting concentrations of four 24-hour composite samples, as well as the average of the four. Effluent limitations calculated from objectives based on the protection of human health are to be implemented as 30 day averages. Therefore for some substances there are two effluent limitations with different averaging periods. In both cases, the effluent limitations shall apply to the mean concentration of samples taken during the averaging period. If only one sample is taken during the averaging period, the effluent limitation applies to the concentration of that sample.

Detection limits, practical quantitation levels(PQL) and limits of quantitation(LOQ) will ~~issues shall be~~ taken into account in determining compliance with, rather than in the calculation of, effluent limitations. Draft guidance on compliance determinations will be developed by the Regional Board, with input from the concerned public, by June, 1992. The guidance will specify analytical methods and quality assurance/quality control measures to be used by dischargers. In addition, it will define the Regional Board's approach to the use of method detection limits, PQLS and LOQs in determining compliance with effluent limitations.

For fresh water objectives that are hardness dependent, a hardness value of 100 mg/l was used in calculating effluent limitations. However, in calculating deep water estuarine effluent limitations, where the chemistry of receiving waters is a function of the hydrodynamics of the Bay, the objectives were calculated at 200 mg/L hardness before comparing with the marine objectives. This hardness value corresponds to a salinity of 1 to 2 parts per thousand, which was considered to be a minimum for estuarine waters. Effluent limitations for shallow water discharges to fresh water may be calculated based on the hardness in ambient waters. ~~A pH value of 7.5 was used in calculating the fresh water effluent limitation for pentachlorophenol.~~

Where an existing effluent limitation for a substance in a discharge is significantly lower than the appropriate effluent limitation in Tables IV-1A or IV-1B, and the discharge is in compliance with the existing effluent limitation, the existing effluent limitation for that substance shall be retained, so as to prevent any significant increase in the concentration in the discharge or mass loading to ambient waters.

In the event that the Regional Board adopts a site-specific objective, effluent limitations shall be calculated from that objective in accordance with the methods described in this Section.

Dilution Ratios

The allocation of dilution ratio depends on whether a discharge is classified as a deep water or a shallow water discharge. The effluent limitations for deep water discharges were calculated using a dilution ratio of 10:1 or $D=9$. While it is recognized that the actual initial dilution of many deep water discharges is greater than ten, the Regional Board has taken this conservative approach to calculating effluent limitations for the following reasons. There is concern over the effects of the cumulative mass loadings of toxic pollutants from the numerous discharges into San Francisco Bay. Limiting the allocation of dilution credits is one means of limiting mass loadings. In addition, recent Regional Board studies have detected toxicity in ambient waters throughout the Bay system based on laboratory toxicity tests. This calls for a cautious approach in allowing the discharge of toxic substances. Third, it is difficult to either measure or predict actual dilution in an estuarine environment. In the estuary the direction of waste transport varies over the course of the tidal cycle, so that it is difficult to determine the fraction of new water versus recirculated water mixing with the discharge. EPA has developed several models of initial dilution for discharge plumes, however, none take into account transport due to tidal currents.

The Regional Board will consider inclusion of an effluent limitation greater than that specified in Table IV-1B when the increase in concentration is caused by implementation of significant water reclamation or water reuse program at the facility, the increase in the effluent limitation does not result in an increase in the mass loading, and water quality objectives will not be exceeded outside the zone of initial dilution.

The effluent limitations for shallow water discharges were calculated assuming no dilution, or $D=0$. In other words, the effluent limitation is equal to the objective. Background concentrations are not taken into account in this case, since no dilution credit is granted.

Shallow water discharges may apply to the Regional Board for exceptions to the assigned dilution ratio of $D=0$ (and thus to the shallow water effluent limitations) based on demonstration of compliance with objectives in the receiving waters. Exceptions will only be considered where the discharger documents that all sources of the toxic pollutant are being controlled through all reasonable treatment and source control measures, including the provisions of the Waste Minimization Program described in this Chapter, and that these actions do not result in compliance with the shallow water effluent limitations. ~~A study plan for~~ The demonstration of compliance with objectives ~~must be approved by the Executive Officer and shall address the following.~~

1. Compliance with water quality objectives, including the chronic toxicity objective, shall be demonstrated within 250 feet of the point of discharge. Objectives to be used in this demonstration are to be based on ambient salinity and hardness at the time of sampling. In addition, demonstration of compliance is to be based on the

averaging period associated with each objective. Compliance with both acute and chronic objectives shall be demonstrated. If fresh water objectives apply in the receiving waters (i.e. salinity is less than 5 parts per thousand) compliance with salt water objectives shall also be demonstrated at the nearest point in the receiving waters where salinity reaches 5 parts per thousand. Such a demonstration shall be based on ambient monitoring at a frequency equal to that typically required for effluent monitoring for a period of time defined in the study plan.

2. An evaluation of worst case conditions (in terms of tidal cycle, currents, or instream flows, as appropriate) through monitoring and/or modeling, to demonstrate that water quality objectives will continue to be met, taking into account the averaging period associated with each objective.
3. An evaluation of the effects of the increase in mass loading resulting from allowing higher concentrations of pollutants in the discharge higher than specified in Table IV-1A, in particular the potential for accumulation of pollutants in aquatic life or sediments to levels which would impair aquatic life or threaten human health. This evaluation may include sampling of sediment and biota in the vicinity of the discharge to determine the accumulation of pollutants resulting from the current levels of discharge.

Results of studies conducted pursuant to the alternate limits provisions in the 1986 Basin Plan will be evaluated to determine what additional work is needed (if any) to address these three points. A study plan for conducting this work must be submitted to the Regional Board for approval by the Executive Officer. Results of the study or studies addressing these three points shall be submitted to the Regional Board. Effluent limitations based on either concentration or mass loading shall be developed for consideration by the Regional Board based on study results and any other available information. The goal in setting effluent limitations shall be to ensure that water quality objectives are met within 250 feet of the point of discharge and that mass loadings are limited to a level that provides protection of beneficial uses. In no case shall such effluent limitations be greater than the deep water effluent limitations. Continued ambient monitoring shall also be required to ensure that water quality objectives are met.

Background Concentrations

When dilution credit is granted, the background concentration of the substance is taken into account in calculating effluent limitations so that the dilution provided by mixing with receiving waters is not over-estimated. According to the Enclosed Bays and Estuaries Plan, "ambient background concentration means the median concentration of a substance, in the vicinity of a discharge, which is not influenced by the discharge." For the San Francisco Estuary it is difficult to identify a location that is not influenced by a discharge. Furthermore, background concentrations should vary within the estuary due to changing geochemistry of the waters as they travel downstream. However, in order

to simplify the calculation of effluent limitations, it is desirable to use one background concentration throughout the Region.

Table IV-1C shows a first approximation of background concentrations for metals in salt and fresh water. These background concentrations were used in calculating the fresh and salt water effluent limitations. The salt water background concentrations are the averages of concentrations measured at three locations in the Central Bay in April, August and December of 1989 (Flegal et al 1991). The fresh water values are averages of measurements taken during the same surveys in the Sacramento River near its confluence with the San Joaquin River. The averages have been rounded off when appropriate. These two locations were chosen for determining background concentrations because they are less influenced by discharges than other areas. For substances not included in Table IV-1C, the background concentrations were assumed to be zero in calculating effluent limitations. As additional data become available, background concentrations for other substances may be added to Table IV-1C.

Table IV-1C: Background Concentrations Used in Calculating Deep Water Effluent Limitations

Substance	Estimated Background Concentrations	
	Salt Water	Fresh Water
Cadmium	70 ng/L	35 ng/L
Copper	1.3 ug/L	4.4 ug/L
Lead	0.3 ug/L	1.0 ug/L
Mercury	4 ng/L	4 ng/L
Nickel	2 ug/L	3.7 ug/L
Silver	6 ng/L	10 ng/L
Zinc	2 ug/L	5 ug/L

Schedules Programs of Implementation

The requirements of the Enclosed Bays and Estuaries and Inland Surface Waters Plans will be incorporated into NPDES permits by revision, either as amendments or at the time of reissuance. Implementation for three types of discharges are discussed below.

Municipal and Industrial Discharges

In order to incorporate the effluent limitations in Tables IV-1A and IV-1B into NPDES permits, two issues must be addressed: selection of parameters for which effluent limitations should be included for each discharge, and establishment of compliance schedules for effluent limitations. The effluent limitations will be added through amendments of NPDES permits by the Regional Board.

Selection of parameters: Effluent limitations for substances already regulated in permits will be modified as necessary. Effluent limitations for substances in Tables IV-1A and IV-1B but not previously regulated will be added in the following cases:

1. There is reason to believe the substance is present in the discharge at a level representing a significant percentage of the applicable effluent limitation, based on monitoring data or information concerning the waste stream.
2. The water quality objective for that substance is exceeded in the receiving waters.

The determination to include a given effluent limitation may be made for categories of similar discharges or for individual discharges. Monitoring requirements will be updated as soon as possible so that adequate data will be available to make this determination.

Compliance schedules: Permits revised before December, 1992 will distinguish between effluent limitations that are met by current performance, and effluent limitations not currently attained. Immediate compliance will be required for effluent limitations that are met by current performance. Compliance with effluent limitations not currently attained will be required by December, 1992. Permits revised after December, 1992 will require immediate compliance for all effluent limitations. The Regional Board will consider dischargers' proposals for longer compliance periods as NPDES permit conditions for particular substances, where justified, as provided for in the Enclosed Bays and Estuaries Plan, Chapter III, Part M. The primary goal in setting compliance schedules is to promote the completion of source control and waste minimization measures, including water reclamation.

Conditions necessary to justify longer compliance periods will include, at a minimum, all of the following:

1. A diligent effort to quantify pollutant levels in the discharge and the sources of the pollutant in the waste stream.
2. Documentation of source control efforts, including compliance with General Source Control/Waste Minimization program described in the Basin Plan.
3. A proposed schedule for additional source control measures or waste treatment.
4. A demonstration that the proposed schedule is as short as possible.

Implementation of source control measures to reduce pollutant loadings to the maximum extent practicable shall be completed as soon as possible but in no event later than April 11, 1996. Implementation of any additional measures that may be required to comply with effluent limitations shall be completed as soon as possible but in no event later than April 11, 2001. However, compliance schedules for sources and substances subject to an Individual Control Strategy (ICS), pursuant to the Clean Water Act Section 304(l), shall not extend more than three years past the date of adoption of the ICS.

Intermittent wet weather discharges will be regulated using technology based effluent limitations rather than the effluent limitations listed in Tables IV-1A and IV-1B.

Discharges of Treated Groundwater to Surface Waters

Typically, regulation of pollutants in NPDES permits for discharge of treated groundwater to surface waters has focused on substances present in the groundwater due to the contamination incident(s) subject to cleanup. Therefore less information is available characterizing pollutant concentrations in these discharges than for municipal and industrial discharges. However, available data indicate that concentrations of metals in treated groundwater often exceed the shallow water effluent limitations. In many cases, the presence of metals in groundwater is due to natural factors related to soil and water chemistry, rather than contamination. The need to minimize the potential for aquatic toxicity due to elevated levels of metals must be balanced against several factors: the total mass loading from these discharges is relatively low; the cost of treatment may be high; and some groundwater with equally high concentrations of metals discharges naturally to surface waters. Due to considerations such as these, the Inland Surface Waters and Enclosed Bays and Estuaries Plans allow for short-term variances from plan provisions, if necessary, for discharges resulting from control measures to protect drinking water supplies.

Over the course of the first year following adoption of this Basin Plan amendment, information will be compiled to evaluate the attainability of the shallow water effluent limitations. Monitoring data from discharges of treated groundwater will be compiled, and information will be gathered to evaluate the cost of complying with the shallow water effluent limitations. The general permit adopted by the Regional Board in April,

1991 (Order No. 91-056) for discharge of treated groundwater from sites contaminated by fuel leaks already requires monitoring for most substances in Tables IV-1A and IV-1B. Other permits for discharge of treated groundwater will be modified to include such monitoring requirements as soon as possible.

Within one year after the adoption of this Basin Plan amendment, a strategy for modifying effluent limitations in NPDES permits for the discharge of treated groundwater will be developed, including the following elements.

1. A determination of natural background concentrations of metals in groundwater will be made.
2. Shallow water effluent limitations that are greater than or equal to natural background concentrations will be included in permits.
3. For substances where natural background concentrations are typically greater than the shallow water effluent limitations, the Regional Board will consider short-term variances to the requirements of the Enclosed Bays and Estuaries and Inland Surface Waters Plans, as provided for on page 2 of the Plans. The variances will take the form of alternate effluent limitations, which shall be based on the following factors:
 - a. Maximum allowable concentrations of metals in effluent shall be established, based on consideration of background concentrations.
 - b. Effluent limitations shall not exceed Maximum Contaminant Levels established for the protection of drinking water, when the receiving waters are designated as sources of drinking water.
 - c. Mass loading limitations will be established based on an evaluation of potential effects in receiving waters.
 - d. Reasonable alternate means of disposal such as reclamation, groundwater recharge, or discharge to the sanitary sewer, will be encouraged.
 - e. The cost effectiveness of increased treatment, in terms of reduction of mass loading of metals, will be evaluated.

Storm Water Discharges

As discussed in the Section on Urban Runoff Management, the Regional Board has initiated a program of regulating certain municipal, industrial, and construction storm water discharges through NPDES permits. Since the sources of pollutants in storm water

discharges and points of discharge are diffuse, and methods of reducing pollutants in storm water discharges are in the development stage, water quality based numerical effluent limitations are not practical at this time. However, storm water dischargers will be required to comply with water quality objectives directly as receiving water limitations.

~~It is not reasonable to expect immediate~~ The Regional Board will take a phased approach towards attainment of all water quality objectives in waters which receive storm water discharges from urban areas and certain industrial and construction activities. Therefore, ~~the~~ The Regional Board will first require entities subject to NPDES permits for storm water discharges to complete implementation of all technically and economically feasible control measures to reduce pollutants in storm water to the maximum extent practicable. For industrial facilities, such control measures include those representing best available technology economically achievable.

NPDES permits for storm water discharges will require completion of all technically and economically feasible control measures as soon as possible. Specific compliance schedules for implementing control measures will be included in permits either by reference to a stormwater management plan or by permit conditions. In no event will these compliance schedules extend beyond April 11, 1996. Technology-based effluent limitations will be included in permits when appropriate.

~~If this first phase does not result in the attainment of receiving water objectives,~~ numerical effluent limitations may be required. Compliance schedules for implementation of additional control measures to achieve compliance with receiving water limitations will be considered only when a discharger has demonstrated the following:

1. a diligent effort to quantify pollutant levels and the sources of the pollutant in storm water discharges;
2. documentation of completion of implementation of all technically and economically feasible control measures; and
3. identification of additional control measures and a proposed schedule for implementation that is as short as possible.

Implementations of any additional measures that may be required to comply with receiving water limitations shall be completed as soon as possible, but in no event later than April 11, 2001. However, compliance schedules for sources and substances subject to an Individual Control Strategy (ICS), pursuant to the Clean Water Act Section 304(l), shall not extend more than three years past the date of adoption of the ICS.

TOXICITY

I. Objectives Section: Proposed Changes

Replace last paragraph on p. III-3 under the heading "Toxicity" with the following:

There shall be no acute toxicity in ambient waters, including mixing zones. Acute toxicity is defined as a median of less than ninety percent survival, and less than seventy percent survival, 10% of the time, of test organisms in undiluted test sample in a 96-hour static or continuous-flow test.

There shall be no chronic toxicity in ambient waters outside mixing zones. Chronic toxicity is a detrimental biological effect on growth rate, reproduction, fertilization success, larval development, population abundance, community composition, or any other relevant measure of the health of an organism, population, or community. Chronic toxicity generally results from exposures to pollutants exceeding 96 hours. However, chronic toxicity may also be detected through short-term exposure of critical life stages of organisms. This narrative objective is equivalent to a numerical objective of 1.0 TUc, as a daily average. A chronic toxicity unit is defined as 100/NOEL (No Observed Effect Level), which is the maximum percent test water that causes no observed effect on test organisms, as determined by critical life stage toxicity tests.

At a minimum, compliance with the acute and chronic toxicity objectives will be evaluated using results of whole effluent toxicity tests conducted by dischargers to determine compliance with effluent limitations. Effluent limitations for both acute and chronic toxicity will be included in permits of discharges to surface waters, as specified in Chapter IV. In addition, the Regional Board may evaluate compliance with toxicity objectives by testing ambient waters, using toxicity tests, or by using other relevant biological measures.

If ambient waters consistently exceed the acute or chronic toxicity objective, and no effluent limitation for toxicity is exceeded in any permitted discharge to the waters in question, the Regional Board, together with all dischargers, including stormwater and other non-point discharges, within the water segment shall perform a toxicity reduction evaluation (TRE). Once the source of toxicity is identified, the responsible entities shall take all reasonable steps to reduce toxicity to the required level.

II. Effluent Limitations Section: Proposed Changes

Replace 3.b. on p. IV-5 with the following:

3.b. Acute Toxicity

Effluent Limitation: The survival of organisms in undiluted effluent shall be a median value of not less than 90 percent survival, and a 90 percentile value of not less than 70 percent survival. Compliance with this limitation will be measured as follows, depending on discharge and monitoring type:

<u>Discharge/monitoring type</u>	<u>At Least 90% Survival</u>	<u>At Least 70% Survival</u>
Continuous discharge/ weekly or monthly tests	11-sample median	11-sample 90 percentile
Continuous discharge/ quarterly or annual tests	3-sample median	Single-sample maximum
Intermittent discharge	—	Single-sample maximum

~~For continuous discharge/weekly or monthly testing frequency, compliance with~~
The 11-sample median and 90th percentile effluent limitation is further defined
as the more restrictive of the following:

- If five or more of the past ten tests samples are less than 90 percent survival, then survival of less than 90 percent on the next, eleventh, test sample represents non-compliance a violation of the effluent limitation,

or

- If one or more of the past ten tests samples is less than 70 percent survival, then survival of less than 70 percent on the next, eleventh, test sample represents non-compliance a violation of the effluent limitation.

Compliance with the acute toxicity limitation will be evaluated by measuring survival of test fishes exposed to undiluted effluent for 96 hours. Each fish species represents a single sample. Dischargers will conduct flow-through effluent toxicity tests, except for those that discharge intermittently and discharge less than 1.0 mgd

(average dry weather flow). Such small, intermittent dischargers will be required to perform static renewal bioassays.

All dischargers will perform toxicity tests using fish species, according to protocols approved by the U.S. EPA or State Board or published by the American Society for Testing and Materials (ASTM) or American Public Health Association. Two fish species will be tested concurrently. These shall be the most sensitive two species determined from a single concurrent screening of three species: three-spine stickleback, rainbow trout and fathead minnow. This three species screening requirement can be met using either flow-through or static renewal bioassays.

The Regional Board may consider allowing compliance monitoring with only one (the most sensitive, if known) fish species, if both the following conditions are met:

- The discharger can document that the acute toxicity limitation, specified above, has not been exceeded during the previous three years, or that acute toxicity has been observed in only one of two fish species,

and

- A single, concurrent screening using all three fish species confirms the documented pattern. All tests must be completed within ten days of initiating the first test.

The Regional Board may modify the flow-through bioassay requirements and the specific test species requirements on a case-by-case basis for discharges of once-through cooling water or excessively saline wastes which make the implementation of these test requirements impractical. Such changes are not intended as a reduction in the acute toxicity limitation, but rather to account for the technical difficulties of performing the tests.

Effluent limitations for acute toxicity will be placed in all permits within 6 months from the adoption of the Basin Plan amendment by the Regional Board.

~~All dischargers shall demonstrate compliance with the acute toxicity limitation according to the following schedule:~~

<u>Discharge Type</u>	<u>Compliance Date</u>
Shallow water dischargers	Date of amendment of Basin Plan
Deep water dischargers	3 months after amendment

~~If the acute toxicity limitation is exceeded, the Regional Board will require a toxicity identification evaluation (TIE), which will include all reasonable steps to~~

~~reduce toxicity to the required level. In addition, the Regional Board may require a toxicity reduction evaluation (TRE) as a follow up to the TIE.~~

Deep water dischargers may be granted an exception to the acute toxicity limitation, if the discharger documents that the only cause of acute toxicity is ammonia ~~one or more nonconservative constituents which and it rapidly decay~~ in the receiving water, and demonstrates that removal of these this constituents would be an unreasonable requirement, taking into account impacts on water quality and beneficial uses.

3.c. Chronic Toxicity

Effluent Limitations: There shall be no persistent chronic toxicity in a discharge above levels defined as follows, depending on discharge and monitoring type:

<u>Discharge/Monitoring Type</u>		<u>Maximum TUc's</u>	
Shallow water dischargers	1 TUc		
Deep water dischargers	10 TUc		
		Deep Water Discharges	Shallow Water Discharges
Continuous discharge/ weekly or monthly samples	11 sample median	10 TUc	1 TUc
	90th percentile	20 TUc	2 TUc
Continuous discharge/ quarterly samples	3 sample median	10 TUc	1 TUc
	single sample maximum	20 TUc	2 TUc
Intermittent discharge/ annual sample	single sample maximum	10 TUc	1 TUc

~~: A TUC is defined as 100/No Observed Effect Level~~

The 11-sample median and 90th percentile effluent limitation is further defined as the more restrictive of the follows:

- If five or more of the past ten samples are greater than 1 or 10 TUC, depending on discharge type, then a chronic toxicity value of greater than 1 or 10 TUC on the next, eleventh, test sample represents persistent toxicity,

~~or~~

- If one or more of the past ten samples is greater than 2 or 20 TUC, depending on discharge type, then a chronic toxicity value of greater than 2 or 20 TUC on the next, eleventh, test sample represents persistent toxicity.

Chronic toxicity expressed as TUC equals $100/\text{NOEL}$. The NOEL (No Observable Effect Level) is the maximum percent test water that causes no observed effect on test organisms, as determined in a critical life stage test.

For intermittent discharges that exceed the single sample maximum, the sampling frequency shall be increased to determine compliance with the 3 sample median. Intermittent discharges are characterized by low flows (less than 1 million gallons per day) and seasonal or periodic in nature.

The median chronic allowable toxicity value are based on dilution of 10:1 for deep water dischargers and no dilution for shallow water dischargers. This cautious allocation of "dilution credits" is considered warranted, in view of observed toxicity in ambient waters (Anderson et. al 1990). The 90th percentile allowable toxicity value provides protection against severe episodic toxic events.

~~Compliance with these limitations will be evaluated in two steps: First, if the discharge exceeds the limits in greater than 10% of effluent samples tested, then the dischargers will conduct toxicity tests on four separate effluent samples with an increased frequency approved by the Regional Board. Second, if the effluent limit is exceeded in one or more of these four samples, then the discharger will be considered out of compliance. If none of the four samples exceeds the limitations, then the discharger will return to routine biomonitoring, and will not be considered out of compliance with the limitation.~~

Permits shall require that if persistent toxicity is exhibited ~~if a discharger is out of compliance with the chronic effluent limitation~~ then a chronic toxicity identification evaluation (TIE) is required. Specific language will be incorporated into

permits requiring the development of workplans for implementing TIEs. TIEs will be initiated within 30 days of detection of persistent toxicity. The purpose of a TIE is to identify the chemical or combination of chemicals that are causing the observed toxicity. Every effort using currently available TIE methodologies shall be employed by the discharger. Identification of sources of chronic toxicity may not be successful in all cases.

As toxic constituents are identified for a discharge, the Regional Board will require a toxicity reduction evaluation (TRE). The purposes of a TRE are to identify the source(s) of the toxic constituents and evaluate alternative strategies for reducing or eliminating their discharge. The TRE shall include all reasonable steps to reduce toxicity to the required level. In addition, the Regional Board will review chronic toxicity test results to assess acute toxicity and consider the need for an acute TIE.

~~If all reasonable steps are taken, Following completion of the TRE, if yet persistent toxicity is still exhibited in a discharge has not been reduced, then the discharger will be considered in compliance with chronic toxicity limitations for a period not to exceed two years, if the discharger participates in a~~ shall pursue all feasible waste minimization program measures at a level that is acceptable to the Regional Board. The discharger must document that the acceptable level of participation is maintained by submitting reports on a specified schedule to the Regional Board.

~~At the end of the two year period, a~~ A Toxicity Reduction Evaluation may again be conducted required. It is likely that if new techniques for identifying and reducing toxicity will then be become available. Alternatively, the cause of effluent toxicity may change, so that existing techniques will enable identification and reduction of toxicity.

Consideration of any enforcement action by the Regional Board for violation of the effluent limitation will be based in part on the discharger's diligence in identifying and reducing sources of persistent toxicity. In certain cases, the Regional Board may find that the discharger did not pursue all reasonable steps to reduce sources of chronic toxicity in the effluent. In these cases, the Regional Board will consider appropriate enforcement action.

~~The chronic toxicity limitations are based on an allowable dilution of 10:1 for deep water dischargers and no allowable dilution for shallow water dischargers. This cautious allocation of "dilution credits" is considered warranted, in view of observed toxicity in ambient waters.~~

Chronic toxicity limitations will be added to the permits of all dischargers that have completed or are currently participating in the Effluent Toxicity Characterization Program (ETCP). This includes all municipal facilities with pre-treatment programs, all major industrial facilities, and selected treated groundwater

- Working with other agencies such as the Bay Area Air Quality Management District to ensure that transportation related strategies and plans will reduce the impact on receiving waters from transportation system runoff discharges.

Progress in the program has included the survey of basic information from flood control agencies and local agencies which own or have maintenance responsibility for storm drain systems. The survey indicated that most local agencies and flood control agencies had limited and often dated information on the storm drain systems that they own or manage. Flow and water quality data describing discharges from the storm drain systems were virtually nonexistent. Few programs exist to control urban runoff. Maintenance programs included cleaning storm drainage inlets, catch basins, and storm drainage lines on an annual or as needed basis only for flood prevention purposes.

Local agencies in Santa Clara County have completed a study which characterized the water quality and pollutant loads attributable to urban runoff discharges. They have joined together to form the Santa Clara Valley Nonpoint Source Dischargers for the purpose of implementing the Santa Clara Valley Nonpoint Source Control and Stormwater Management Program, an urban runoff management program. The Board issued a NPDES permit to the Santa Clara Valley Nonpoint Source Dischargers in June 1990 which requires the implementation of their urban runoff management program. The program includes the development, assignment, and implementation of control measures to reduce pollutants in urban runoff discharges in Santa Clara County. ~~A similar characterization effort is also being conducted by the local agencies in Alameda County. The results of the characterization study and an urban runoff management program plan for Alameda County will be submitted as part of an application for a NPDES permit by July 1991.~~ Local agencies in Alameda County have also completed an urban runoff water quality and pollutant loads characterization study. They have joined together to form the Alameda County Urban Runoff Clean Water Program and have developed an urban runoff (stormwater) management plan. The Board issued a NPDES permit to the Alameda County Urban Runoff Clean Water Program in October 1991 which requires the implementation of their urban runoff management plan.

The EPA promulgated regulations (40 CFR Parts 122, 123, and 124) for storm water discharges in November 1990. The regulations list the types of storm water discharges for which NPDES permits are required. These include discharge from a municipal separate storm drain system serving a population of 100,000 or more, discharge associated with industrial activity, discharge from construction activities that result in the disturbance of five acres total land, and discharge that contributes to a violation of a water quality standard or is a significant contributor of pollutants to the receiving waters. The regulations authorize the issuance of system-wide or jurisdiction-wide permits and they effectively prohibit non-storm water discharges to storm drains. They also require listed municipalities to implement control measures to reduce pollutants in urban storm water runoff discharges to the maximum extent practicable. Industrial storm water sources are subject to best available technology economically achievable (BAT) based

standards. The Board will, where necessary, require storm water discharge permits for discharges not cited in the regulations which are a significant contributor of pollutants to waters of the Region.

The Board's continuing strategy for urban runoff management will include:

- the development and implementation of baseline control programs with a focus on prevention in all cities and counties in the Region;
- the development and implementation of comprehensive control programs with a focus on prevention and remediation in a phased program beginning with selected cities and counties in the Region;
- a highway runoff control program;
- an industrial activity control program; and
- a construction activity control program.

The Board will conduct surveillance activities and provide overall direction to verify and oversee implementation of urban runoff control programs. Technical guidance for prevention activities, the identification, assignment, and implementation of control measures, and monitoring will be developed.

Baseline Control Program

All local agencies, including special districts, in the cities and counties in the Region that are listed in Table IV-9A which own or have maintenance responsibility for storm drain systems should develop and implement a baseline control program to prevent the increase in pollutants in discharges from these systems. These programs include: operation and maintenance programs for new and existing public and private storm drain systems; ordinances or other means requiring the control of runoff from new development and significant redevelopment both during construction and after construction is completed; and education measures to inform the public, commercial entities, and industries on the proper use and disposal of materials and waste and correct practices of urban runoff control. The programs should be coordinated with POTW and industrial waste minimization programs and local hazardous materials management programs. The programs should also include surveillance, monitoring, and enforcement activities to ensure and document implementation.

Cities and counties should review and revise their planning procedures and develop or revise comprehensive master plans to assure that increases in pollutant loading associated with newly developed and significantly redeveloped areas are, to the maximum extent practicable, limited. Areas that are in the process of development, or redevelopment, offer the greatest potential for utilizing the full range of structural and non-structural control measures to limit increases in pollutant loads. Comprehensive planning must be used to

TABLE IV-9A
BASELINE CONTROL PROGRAM MUNICIPALITIES

<u>Cities</u>	<u>Counties</u>
Belvedere	Marin
Benicia	Napa
Calistoga	Solano
Corte Madera	Sonoma
Fairfax	
Larkspur	
Mill Valley	
Napa	
Novato	
Petaluma	
Ross	
San Anselmo	
San Rafael	
Sausalito	
St. Helena	
Tiburon	
Yountville	

incorporate these measures in the process of developing. Cities and counties should fully utilize their authority under CEQA to assure implementation of control measures at all proposed development and significant redevelopment projects.

Flood control agencies should consider the impact of flood management projects on the water quality of receiving waters. ~~A well-developed storm water management program can~~ Flood management projects, facilities, or operations should be designed, operated, and maintained to reduce the amount of pollutants in storm water discharges as well as achieving flood control objectives.

The Board's involvement in the baseline program will be to work with cities and counties and encourage voluntary implementation of baseline control measures; to identify the need for and provide technical guidance; and to participate in developing model ordinances as necessary. Environmental Impact Reports on new development and significant redevelopment will be reviewed for consistency with the baseline control program. The Board will focus its surveillance, monitoring, and enforcement activities on implementation of effective baseline control programs. The effectiveness of a municipality's baseline control program will also be considered when issuing NPDES permits for construction activities pursuant to the Board's Construction Activity Control Program.

Pursuant to Section 13225(c) of the California Water Code all local agencies, including special districts, in the municipalities listed in Table IV-9A that own or have maintenance responsibility for storm drain discharges to waters of the Region are required to submit an annual report by July 1-September 1 each year beginning in 1992 which includes: a description of operation and maintenance activities associated with the storm drain systems; a description of master planning procedures and documentation of activities; a list of all new development and significant redevelopment projects with documentation that urban runoff control measures have been required and are being implemented; documentation of educational measures; and documentation of surveillance, monitoring, and enforcement activities. The annual report should include a qualitative evaluation of the effectiveness of the Baseline Control Program including, but not limited to, documentation or accounting of program accomplishments, funds expended, and staff hours utilized; provide an overall evaluation of the program; and set forth plans for the upcoming year.

To the extent that voluntary implementation of baseline control programs is not realized, the Board will act, where necessary, to require individual local agencies pursuant to Section 13225(c) of the California Water Code to investigate specific runoff discharges to quantify pollutant loads and to identify and implement control strategies for the control of pollutants in urban runoff. The Board will, where necessary, require individual local agencies to file a Report of Waste Discharge or NPDES permit application for the implementation of baseline control programs.

Comprehensive Control Program

Selected cities and counties are required to develop and implement comprehensive control programs which focus on prevention of water quality problems and remediation of existing problems. In addition to baseline control program elements, comprehensive control programs will include characterization of urban runoff discharges to the extent necessary to support program development and implementation and the implementation of urban runoff management plans which include: measures to reduce pollutants in runoff to the maximum extent practicable from commercial, residential, and industrial areas; measures to eliminate illicit connections and illegal dumping into storm drain systems; measures for operating and maintaining public highways to reduce pollutants in runoff; and measures to reduce pollutants in discharges associated with the application of pesticides, herbicides, and fertilizer which will include, as appropriate, controls such as educational activities and other measures for commercial applicators and distributors, and controls for application in public right-of-ways and at municipal facilities. The requirements of the comprehensive control program are intended to be consistent with NPDES regulations for municipal storm water discharges. The Board will act to require selected cities and counties to file a NPDES permit application for the implementation of comprehensive control programs. On an annual basis, each city or county shall conduct an evaluation of the effectiveness of its Comprehensive Control Program. Measures of effectiveness include, but are not limited to, quantitative monitoring to assess the effectiveness of control measures, detailed accounting of program accomplishments, funds expended, and staff hours utilized. This annual report shall provide an overall evaluation

of the program and set forth plans and schedule of implementation for the upcoming year. Submittal date for the annual report will be prescribed in the NPDES permit for the program.

The Board considers the urban runoff management programs which are being implemented by the Santa Clara Valley Nonpoint Source Dischargers and the Alameda County Urban Runoff Clean Water Program pursuant to a NPDES permits issued by the Board to be a comprehensive control program. Additionally, the urban runoff management program plan that will be submitted as part of an application for an NPDES permit by July 1991 by the local agencies in Alameda County will be considered a comprehensive program plan. The City and County of San Francisco has a combined (sanitary and storm) sewer system which is operated in accordance with existing NPDES permits, and consequently, is not subject to the stormwater NPDES regulations.

In addition to the implementation of comprehensive programs in the urban areas of Santa Clara and Alameda counties, there is a need to develop and implement similar programs in the urban and rapidly developing areas of Contra Costa, San Mateo, and Solano counties. Urban runoff discharges from these areas are considered significant sources of pollutants to waters of the Region and may be causing or threatening to cause violation of water quality objectives. The local agencies (cities, the county, and special districts) in San Mateo and Contra Costa counties and the cities of Vallejo, Suisun City, and Fairfield shall submit a NPDES permit application for implementation of a comprehensive control program. Part 1 and Part 2 of the application, equivalent to the requirements at 40 CFR Part 122.26(d), shall be submitted by May 18, 1992 and May 17, 1993, respectively by the local agencies in Contra Costa County; by November 30, 1992 and November 30, 1993, respectively by the local agencies in San Mateo County; and by March 31, 1993 and March 31, 1994, respectively by the cities of Vallejo, Suisun City, and Fairfield. The Board intends to consider similar action for the cities of San Rafael, Novato, Petaluma, Napa, and Benicia and the ports of Oakland, Richmond, and San Francisco at a later time.

Highway Runoff Control Program

An essential component of a municipal comprehensive program is the implementation of practices for maintaining public highways and procedures for reducing the impact on receiving waters from public highway runoff discharges. However, cities and counties do not have jurisdiction over public highways controlled by the California Department of Transportation (Caltrans). In order to ensure that all public highways are effectively maintained, Caltrans shall submit a Report of Waste Discharge and NPDES permit application for storm water discharges from highways under its jurisdiction within the Region by July 1, 1992. The application shall include a Storm Water Management Plan which will address the design, construction, and maintenance of highway facilities relative to reducing pollutants in highway runoff discharges to the maximum extent practicable. The application shall also include the following:

- a summary of all existing data characterizing Caltrans highway runoff;

- a description of existing highway runoff control measures; and
- a plan for monitoring the effectiveness of control measures and highway runoff water quality and pollutant loads.

The highway runoff management plan shall include litter control, pesticide/herbicide use management, reducing direct discharges, reducing runoff velocity, grassed channels, curb elimination, catchbasin maintenance, appropriate street cleaning, establishing and maintaining vegetation, infiltration practices, and detention/retention practices. When possible, Caltrans should coordinate with existing agencies and programs related to the reduction of pollutants in highway runoff.

Industrial Activity Control Program

The Board will require, pursuant to the NPDES stormwater regulations, a NPDES permit for the discharge of storm water from all facilities associated with industrial activities. The industrial activity control program shall apply to the discharge from any conveyance which is used for collecting and conveying storm water and which is directly related to manufacturing, processing, or raw materials storage areas at an industrial facility. Such discharge includes, but is not limited to, storm water discharges from industrial plant yards; immediate access roads and rail lines used or traveled by carriers of raw materials, manufactured products, waste material, or by-products used or created by the facility; material handling sites; refuse sites; sites used for the application or disposal of process wastewaters; sites used for storage and maintenance of material handling equipment; sites used for residual treatment, storage, or disposal; shipping and receiving areas; manufacturing buildings; storage areas (including tank farms) for raw materials, and intermediate and finished products; and areas where industrial activity has taken place in the past and significant materials remain and are exposed to storm water. The program shall apply, but not be limited to, all facilities identified at 40 CFR Part 122.26(b)(14) and include both privately and publicly (federal, state, and municipal) owned facilities.

The Board's permitting strategy for industrial facilities is based on a four tier set of priorities for issuing permits:

- **Tier I - Baseline Permitting:** One or more general permits will be developed initially to cover the majority of storm water discharges associated with industrial activity in the Region. ~~The Board will consider issuing a general permit prior to November 18, 1991, the NPDES permit application deadline requirement.~~ The State Board will consider issuing a general permit in November 1991 for storm water discharges associated with industrial activity. The majority of storm water discharges associated with industrial activity in the Region will be allowed coverage under this State Board general permit. Requirements of the notification of intent to be covered under the general permit and the schedule for submittal will be established in the permit.

- **Tier II - Watershed Permitting:** Facilities within watersheds shown to be impacted by storm water discharges from facilities associated with industrial activity will be targeted for individual or watershed-specific general permits. The Board intends to consider a general permit or permits specific to Santa Clara and Alameda counties to allow for more effective coordination with the comprehensive control programs in these counties. The Board will consider issuing a general permit prior to November 18, 1991 for storm water discharges associated with industrial activity located in the portions of Santa Clara County which drain to South San Francisco Bay. The Board will consider a similar general permit specific to Alameda County at a later time.

~~The Board will consider issuing a general permit prior to November 18, 1991 for storm water discharges from automotive operations, including gas stations, auto repair shops, auto body shops, dealerships, and mobile fleet washing businesses, in Santa Clara County. The focus on automotive operations in Santa Clara County will serve as a pilot program prior to regulating these significant sources of pollutants Region-wide.~~

- **Tier III - Industry-Specific Permitting:** Specific industrial categories will be targeted for individual or industry-specific general permits. Storm water discharges from large military facilities in the Region may be significant sources of pollutants, and, as such, the Board will consider issuing a general permit or individual permit(s) specific to these facilities.

~~The Board considers storm water discharges from automotive operations, including gas stations, auto repair shops, auto body shops, dealerships, and mobile fleet washing businesses significant sources of pollutants to waters in the Region. The Santa Clara Valley Nonpoint Source Dischargers are addressing these discharges at the local level through ordinances as part of their comprehensive control program. This focus on automotive operations in Santa Clara County will serve as a pilot program that will be assessed by the Board before considering the need to permit these discharges.~~

- **Tier IV - Facility-Specific Permitting:** A variety of factors will be used to target specific facilities for individual permits.

General permits for industrial facilities will not be less stringent than individual permits. Rather the use of general permits is intended to alleviate the administrative burden of issuing storm water permits to all industrial facilities. All permits, whether general or individual will require compliance with all local agency requirements. In addition, industrial facilities will have to eliminate all non-storm water discharges from storm drain systems unless they are authorized by a NPDES permit or determined not to be a source of pollutants requiring a NPDES permit for discharge. The Board will consider issuing general permits authorizing non-storm water discharges as the need arises. Industrial facilities will be expected to identify "hot areas" where runoff may contact pollutants or activities may release pollutants to runoff; segregate storm water discharges from the "hot areas", identify and implement control measures for "hot areas", and identify and

implement control measures for other areas at the facility equivalent to municipal controls consistent with local agency comprehensive control programs.

Construction Activity Control Program

The Board will require, pursuant to the NPDES storm water regulations, a NPDES permit for the discharge of storm water from construction activities that result in the disturbance of five acres or greater total land area or are part of a larger common plan of development that disturbs greater than 5 acres of total land area. The Board will consider issuing two general permits prior to November 18, 1991 for storm water discharges from construction activities: one for construction activity discharges in the Region except for activities in Santa Clara County; and one for construction activity discharges in Santa Clara County. The State Board will consider issuing a general permit prior to October 1, 1992, the NPDES permit application deadline requirement, for construction activity discharges. The majority of construction activity discharges in the Region will be allowed coverage under this State Board general permit. The Board will consider issuing a general permit prior to October 1, 1992 for construction activity discharges located in the portions of Santa Clara County which drain to South San Francisco Bay. The separate general permit specific to Santa Clara County is intended to allow for more effective coordination with the implementation of comprehensive control programs by the local agencies in the county.

Requirements of the notification of intent to be covered under the general permit and the schedule for submittal will be established in the permit. Permit conditions will address pollutant discharges that occur during construction activities, the discharge of construction waste material, and the discharge of pollutants in runoff after construction is completed. Permit conditions are expected to be consistent with the Board's erosion and sediment control policy (Resolution 80-5) and consistent with local agency ordinance and regulatory programs. The intent of the permit will not be to supersede local programs, but rather to compliment local requirements. This will require local agencies to effectively address construction activities through their early planning, CEQA processes, and implementation of development control measures as part of their baseline or comprehensive control programs.

SOURCE REDUCTION AND WASTE MINIMIZATION

Policy Statement

Source reduction and waste minimization is an important component of the Mass Emissions Strategy (MES) recommended in the State Water Resources Control Board's Pollutant Policy Document for the San Francisco Bay-Delta. The MES would require the Regional Board to develop limitations on the mass emissions of toxic pollutants to reduce the overall quantity of toxic emissions into the Region's watersheds. The Regional Board supports reducing toxic discharges through more efficient use, conservation, recycling, reuse, and waste reduction. The source reduction and waste minimization program is a pollution prevention measure designed to eliminate the discharge into water of toxic wastes from manufacturing processes, commercial facilities, and the community at large. This program will be increasingly important as alternative uses of wastewater such as reclamation are developed. Waste minimization techniques will allow for the protection of surface and ground water and include material recycling and reuse, water and material conservation, material substitution, product substitution, and process modifications. Source reduction and waste minimization as applied here is focused specifically on reducing the quantity of toxic pollutants released to the waters of the basin by major municipal and industrial dischargers. While emphasizing source reduction and waste minimization, it also includes improved waste management and expanded pretreatment programs.

The San Francisco Bay Region source reduction/waste minimization program will be a two-tiered program consisting of a targeted and a general program. The program focuses on indirect discharges that are regulated through Publicly Owned Treatment Works (POTWs) and major industrial dischargers that discharge directly to surface water. These programs will take multimedia concerns into account by coordinating with other relevant regulatory programs related to air, water, and land disposal.

Targeted Waste Minimization Program

The targeted waste minimization program consists of two components. First, identify pollutants and areas of concern in the Bay by identifying where numerical and narrative water quality objectives are exceeded and beneficial uses are impaired or threatened based on analysis of available data and data from regional and local monitoring programs conducted by the Regional Board and other entities. Second, in those areas of the watershed or estuary system identified as having objectives exceeded or waters impaired, point source dischargers will be identified and required to participate in a targeted waste minimization program. This step may necessitate further monitoring of water, sediment and biota by POTWs and direct discharges at and near their discharge locations in order to determine the effects of particular discharges on the waters of the basin. Impacting point sources will be required to

develop and implement a waste minimization program that is targeted towards reducing the identified pollutants of concern.

POTW Targeted Program

The POTW source reduction/waste minimization program should include

- 1) Determination of contributions of target metal and organic pollutants discharged to the POTW from (a) regulated industrial users, (b) commercial facilities, (c) water supplies, and (d) domestic sewage.
- 2) Enhancement of existing pretreatment programs through improved inspection, monitoring, enforcement, and information management. This would include a program of waste minimization audits for selected groups of significant industrial users (IUs).
- 3) Identification and regulation of previously unregulated industrial users and commercial facilities that discharge the pollutants of concern to the POTW. POTWs should prioritize currently unregulated categories of industry and develop technical assistance programs for local industries.
- 4) Public education and outreach including household hazardous waste collection programs, information toxics disposal to POTW customers, and presentations to industrial, commercial, and residential dischargers.
- 5) Development of monitoring or other evaluation measures to gauge and document the effectiveness of the program.

Direct Industrial Discharger Targeted Program

As with POTWs, priority direct dischargers will be identified from existing monitoring information on water quality of surface water bodies in the Region. Direct dischargers may be required to conduct further monitoring. Those identified as contributing to water quality impairment will be required to carry out a waste minimization program. The program should reduce the pollutants of concern to meet the water quality objectives of the Basin Plan. Programs will include all applicable elements of the POTW programs listed above. The program will also include investigation of upstream sources of pollutants of concern.

The POTW and industrial targeted program may require other options such as performance-based effluent concentration limits and mass limitations for the pollutants of concern, in order to attain water quality objectives in the receiving water body. Phased implementation of the program will be carried out in coordination with the development and implementation of other tasks of the Mass Emissions Strategy.

General Waste Minimization Program

All major dischargers not required to implement targeted programs will be mandated to conduct a general program within their jurisdiction. In the first phase of the general program, all major industrial dischargers and POTWs that 1) are not included in the targeted program, 2) have an approved pretreatment program, and 3) have an average dry weather discharge greater than 10 MGD will be required to prepare a plan for a general waste minimization/source reduction program and submit for Regional Board approval. The plans are due six months following approval of the Basin Plan by the State Board. An interim progress report will be due from all Phase I discharges on January 1, 1993 and July 1, 1993. Progress reports should have a detailed description of the program, including staffing, funding, and training for instituting the program. In the second phase, all other POTWs with pretreatment programs will be required to develop source reduction/waste minimization programs. The plan for the second phase of the program will be due to the Regional Board one year after adoption of the Basin Plan by the Regional Board, with progress reports on the program due by July 1, 1993, and December 31, 1993. Voluntary program that have been developed to date will be given credit in the general program.

POTW General Program

The general program for a POTW should contain all applicable elements from the targeted program (elements 2-5); the general program is designed to be more flexible and allow the individual POTWs to develop and direct their waste minimization efforts according to local needs. General programs should include the following elements:

- 1) Review of pretreatment programs for identification of opportunities for expansion and enhancement. This includes opportunities for incorporating waste reduction goals into inspections, enforcement, and permitting.
- 2) Waste minimization audits for industrial users on a priority determined by the POTW. Criteria for prioritization should include discharge of pollutants of concern, volume of flow, IU compliance, and opportunities for waste reduction. Audits can be performed by POTW or IU.
- 3) Public outreach including education programs, advertisement in local media, mailers, and household hazardous waste programs.
- 4) Program expansion by developing a plan for increased regulation for at least two existing or additional categories of sources that contribute pollutants of concern to the POTW influent. Examples of additional source categories are waste oil disposal, household products, car and truck washing operations,

medical and dental facilities, paint and related product disposal, dry cleaning facilities, and photofinishing facilities.

- 5) Coordination with other programs involved in recycling, reuse, and source reduction of toxic chemicals. This includes programs involving urban runoff, air toxics, hazardous waste, and land disposal. This might include developing programs for joint inspections and sharing in enforcement activities.
- 6) A monitoring program specifically designed to measure the effectiveness of waste minimization activities in reducing toxic loads to the receiving watershed, air, or land via sludge disposal.

Direct Industrial Discharger General Program

The direct industrial discharger source reduction/waste minimization program must be in compliance with The Hazardous Waste Source and Management Review Act of 1989, SB14 (CRC Title 22, Ch 30, Art 6.1) waste minimization program requirements as well as in compliance with their NPDES permit effluent limitations.

The direct discharger source reduction/waste minimization program plans must include detailed descriptions of tasks and time schedules to investigate and implement various elements of waste minimization techniques. These techniques should include material substitution, process modifications, water conservation, onsite and offsite recycling, and good housekeeping practices.



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